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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 09/331,723 | 08/18/1999 | JOHN E. BOYNTON | 2185-156PCT | 2008 |

7590 12/26/2007
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| EXAMINER | |
| MEHTA, ASHWIN D | |

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| ART UNIT | PAPER NUMBER |
| 1638 | |

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| MAIL DATE | DELIVERY MODE |
| 12/26/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 09/331,723 | Applicant(s) BOYNTON ET AL. | |
| | Examiner Ashwin Mehta | Art Unit 1638 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 48-67 and 70-83 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 66 and 78-83 is/are allowed.
- 6) ☒ Claim(s) 48-65, 67 and 70-77 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 1999 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

2. Claims 52 and 72-77 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 52: the recitation, "the algal cells or algal cells" renders the claim, and those dependent thereon, indefinite. The double recitation of "algal cells" appears to be in error. However, the Examiner cannot conclude exactly what other recitation was intended instead.

3. Claims 48-51, 53-65, 67, and 70-71 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, for the reasons of record stated in the Office action mailed April 9, 2007. Applicants traverse the rejection in the paper submitted October 9, 2007. Applicants' arguments were fully considered but were not found persuasive.

In response to the previous citations of Puchta and Terada et al. by the Examiner, Applicants argue that both report that there were several publications disclosing homologous

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recombination performed in plants at the time of the instant invention. In response to the Examiner's previous citation of Li et al., Applicants argue that Li et al. do not deny the possibility that this mutant PPO gene can be used to develop PPO-resistant crops (response, page 16, 1st full paragraph). However, Puchta and Terada et al. discuss the flaws of the previous publications disclosing homologous recombination, as was discussed in previous the Office actions. Further, the assertion by Li et al., pointed out in the last Office action, indicates that further research was required to determine if the mutant PPO gene of the invention can be used to develop PPO-resistant crop plants. Li et al. was published after the filing date of the instant application.

Applicants argue that the technology that the Examiner claims is lacking enablement was clearly within the capabilities of one of ordinary skill in the art as exemplified by publications indicative of the art, and cite a single reference in support, U.S. Patent No. 5,501,967 ('967; response, page 16, 2nd full paragraph). However, it is noted that the claimed invention of '967 requires Agrobacterium T-DNA vectors having particular structures, whereas as the instant claims do not recite any such structures. The T-DNA vectors of '967 comprise regions of DNA sequences that are sufficiently homologous with a target locus and sufficiently long to promote homologous recombination. The instant specification does not teach that the DNA fragments of the claims have sufficient homology with PPO genes of other plants, and with the correct region of such PPO genes. It is also noted that in the working examples in '967, the sequences within the vectors that were introduced into plant cells recombined with the same sequences in the target locus. That is, the gene fragment in the introduced vector was from the same gene in the host plant. Further, it is the specification that must enable the claimed invention. See

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Genentech, Inc. v. Novo Nordisk, A/S, 42 USPQ2d 1001, 1005 (Fed. Cir. 1997), which teaches that "the specification, not the knowledge of one skilled in the art" must supply the enabling aspects of the invention.

Applicants continue, arguing that the Examiner is improperly using a "clear and convincing evidence" standard rather than a "preponderance of the evidence" standard; that the Examiner has provide nothing more than conclusory statements; and that Applicants have sufficiently rebutted Examiner's premise of the enablement rejection by citations to publications that supposedly clearly evidence the state of the art at the time of filing (response, pages 16-18). However, as discussed above and in previous Office actions, the Examiner addressed Applicant's arguments and cited art showing that previous publications regarding homologous recombination, including those cited by Applicants, were not feasible or repeatable by others in the art.

Summary

4. Claims 48-67 and 70-83 are pending. Claims 48-65, 67, and 70-77 are rejected and claims 66, 78-83 are allowed.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

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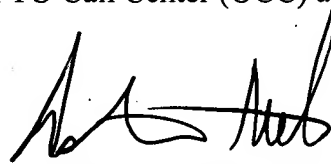
MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this or earlier communications from the Examiner should be directed to Ashwin Mehta, whose telephone number is 571-272-0803. The Examiner can normally be reached from 8:00 A.M to 5:30 P.M. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anne Marie Grunberg, can be reached at 571-272-0975. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300. Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

December 20, 2007



Ashwin D. Mehta, Ph.D.
Primary Examiner
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